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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,699	10/22/2003	Hiroshi Kainuma	TOC-0007	4633

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RADER FISHMAN & GRAUER PLLC
LION BUILDING
1233 20TH STREET N.W., SUITE 501
WASHINGTON, DC 20036

EXAMINER	
WEINSTEIN, LEONARD J	

ART UNIT	PAPER NUMBER
3746	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/689,699	KAINUMA ET AL.	
	Examiner	Art Unit	
	LEONARD J. WEINSTEIN	3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 February 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) *3 and 6* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4 and 5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *02/20/2009*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to the amendment of February 20, 2009. In making the below rejections and/or objections the examiner has considered and addressed each of the applicant's arguments.

2. The examiner acknowledges the amendments to claims 1 and 2.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claim1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kumagai et al. US 6,250,6000 in view of Umemura et al US 2002/0098091 as evidenced by Shimizu et. al JP 001153043 (hereto fore cited by reference to the figures and disclosure of Shimizu et al. US 6,350,106). Kumagai discloses the following limitations as claimed including: **[claim 1]** a control valve for a variable capacity compressor 50 comprising a bellows main body 67, retained as a pressure sensing element in a

bellows case 66 with an airtight structure, and transfers expansion and contraction of the bellows main body in response to a variation in inlet pressure 72 of a variable capacity compressor to a valve element 61 through a valve rod, 65 and 77, supported to be movable in a valve lifting direction from a valve housing 54 integral with said bellows case to thereby change a valve opening degree, a patch member, 69 of 71, is provided to a movable-side end portion of the bellows main body and is formed with a fitting recessed portion 78, a valve rod 59 being fitted to be able to float in the fitting recessed portion, one end portion, bottom portion of element 59, of a valve rod 59 housed in the fitting recessed portion 78 of a patch member 69 in a tiltable manner, and a compression coil spring 70 disposed between the patch member and a lower patch member 68 for supporting a fixed-side end portion of the bellows main body; wherein a valve housing, portion of element 51 surrounded by element 52, is formed with a valve rod retaining hole 56 formed therethrough and sized to slidably receive the valve rod (65, 77) in a close fitting relationship so that a valve contacting end portion (portion of element 65 in contact with element 61) contacts the valve element 61 while the contacting end portion 77 of the valve rod (65, 77) opposite the valve contacting end portion (top of element 65 in contact with element 61) of the valve rod (65, 77) contacts the fitting recessed portion 78, the contacting end portion 77 of the valve rod 12 is sized to be received in a section of the recessed fitting portion 78.

Kumagai does not teach fitting recessed portion that defines a valve-end receiving chamber extending in the valve lifting direction that receives a contacting end portion of the valve rod (65, 77) in the arrangement disclosed. However after further

consideration of Kumagai it is apparent that if several simple modifications were made, this limitation would be taught by the valve of figure 2 of Kumagai. The examiner notes that one of ordinary skill in the art could dissemble the base portion 53 from the valve body 51 and rotate 180^0 the bellows assembly defined by elements 66, 67, 68, 68a, 70, and 71and reassemble the valve of figure 2 provided that screw member 73 is not threaded into the chamber housing a bellows 66. This modification would then teach the limitation of "a fitting recessed portion **[now formed by portion of element 68 that fit over element 73]** defining a valve-end receiving chamber **[space defined between the vertical wall element 68 is comprised of]** extending in the valve lifting direction, a ~~connecting~~ contacting end portion **[77]** of the valve rod **[12]** being fitted to be able to float in the fitting recessed portion."

It has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. *In re Einstein*, 8 USPQ 167. It has also been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70. The examiner notes that the modification discussed would equate to reversal a single assembly of components of the valve taught by Kumagai. The reversal of bellows assembly is evidences by Shimizu. As shown in figure 1, and with reference to the components of the pressure sensing device 20b of the capacity control mechanism 20, the arrangement where a valve rod 34 is received within a recess, within a patch member, on the valve lifting side of a bellows chamber was a known arrangement at the time the invention was made. Since this was a known valve arrangement that would require a minimal modification using the same components of

the valve, it would have been obvious to one having ordinary skill in the art at the time the invention was made to disassembly a valve as taught by Kumagai and rotate a bellows assembly 180^0.

It may be argued that the modification proposed may require that a valve rod increase in length. This is again would be a minor modification and amount to a change in size which is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

Kumagai as modified above would still teach the claimed invention except for the following limitation that is taught for a control valve by Umemura wherein an edge of an end portion of a valve rod 41 (a contacting end portion) is roundly or hemispherically shaped, as shown in figure for with the distal end of element 42, and wherein the fitting recessed portion is formed such that a patch member 68 can be tilted with respect to the valve rod 42 (Umemura - ¶0055). Modifying a valve rod such as Kumagai so that it has a rounded surface at a distal end of a valve rod in contact with a patch member would substitute for a ball 77 of Kumagai while ensuring a force corresponding to the displacement of a bellows is reliably applied (Umemura - ¶0055). In addition a modification to Kumagai providing a valve rod with a rounded end surface would result in a reduction of parts. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a valve rod with a rounded end as taught by Umemura to reduce the number of components required to reliably apply the force generated by the displacement of a bellows of a control valve as taught by Kumagai (Umemura - ¶0055).

6. Claims 2, 4, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kumagai et al. US 6,250,6000 in view of Umemura et al US 2002/0098091 as evidenced by Shimizu et. al JP 001153043 (hereto fore cited by reference to the figures and disclosure of Shimizu et al. US 6,350,106), as applied to claim 1 above. In light of a modification to Kumagai as discussed, the limitations of claims 2, 4, and 5 would be taught by virtue of the modified arrangement proposed. With reference to Kumagai the modification of Kumagai in combination with Umemuar would teaches the limitations including: **[claim 2]** a contacting end portion (round end of element 65 minus element 77 of Kumagai in contact with the fitting recessed portion (once bellows assembly is reversed the portion of element 68 that fit over element 73) in a substantially central position in a bellows chamber 53 expanding/contracting direction of the bellows main body 66 or on a on the fixed side end portion side (now defined by element 71); **[claim 4]** a bottom portion (now defined by element 68a) of the fitting recessed portion (portion of element 68 that fit over element 73) which can come in contact with a stopper face portion (now 71a) at a central portion of a lower patch member (now 71); **[claim 5]** and a fixed side end portion (now end of element 66 in contact with element 71) of the bellows main body (66, 68, 70, 71) is mounted to a lower patch member (now 71) substantially in the same shape as the patch member (now 71), a side face of the lower patch member (vertical wall of element 71) of the lower patch member (now 71) is supported on a support tube portion (now element 69) formed to stand from the bellows case 66, and a stopper face portion (now 71a) at a central portion of the lower patch member (now 71) is supported on a support portion (now element 69) extending from

an adjusting screw member 73). This paragraph sets forth the additional limitations that would be taught by a modification to Kumagai as discussed above.

Response to Arguments

7. The rejections have been modified to address the amendments to claims 1 and 2.

8. Applicant's arguments filed February 20, 2009 have been fully considered but they are not persuasive.

9. **Arguments**

a. The applicant argues on page 6 of the response that the references applied above do not teach or suggest an edge of a contacting end portion of a valve rod that is roundly or hemispherically shaped.

b. The applicant argues that the prior art does not teach fitting a recessed portion formed such that a patch member an be titled with respect to valve rod.

10. **Response**

a. Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

b. **In response** the examiner maintains that Umemura teaches, with respect to section **(8.a.)** above, an edge of an end portion of a valve rod 41 (a contacting end portion) is roundly or hemispherically shaped, as shown in figure for with the distal end of element 42, and, with respect to section **(8.b.)** above, a fitting

recessed portion is formed such that a patch member 68 can be tilted with respect to the valve rod 42 (Umemura - ¶0055). Further the examiner holds that modifying a valve rod such as Kumagai so that it has a rounded surface at a distal end of a valve rod in contact with a patch member would substitute for a ball 77 of Kumagai while ensuring a force corresponding to the displacement of a bellows is reliably applied (Umemura - ¶0055). In addition a modification to Kumagai providing a valve rod with a rounded end surface would result in a reduction of parts. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a valve rod with a rounded end as taught by Umemura to reduce the number of components required to reliably apply the force generated by the displacement of a bellows of a control valve as taught by Kumagai (Umemura - ¶0055).

Conclusion

2. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEONARD J. WEINSTEIN whose telephone number is (571)272-9961. The examiner can normally be reached on Monday - Thursday 7:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Leonard J Weinstein/
Examiner, Art Unit 3746

Dean Kramer 6/29/09